

REMARKS

Claims 1-4 are all the claims pending in the application.

Claims 1 and 3-4 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 6,326,780 to Striker (hereinafter “Striker”). Claim 2 stands rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Striker in view of U.S. Patent Publication No. 2004/0046624 to Schmollngruber (hereinafter “Schmollngruber”). Applicants submit that claims 1-4 would not have been rendered obvious in view of the cited references.

Applicants do not acquiesce to the above rejections. However, in order to expedite prosecution, Applicants have amended claim 1 to recite that the rotation angle is detected based on the steering angle of the steering wheel by making two turns of the steering shaft as one cycle of the steering angle signal by adjusting a moderation ratio between the sensor wheel and the steering shaft. Applicants submit that Striker does not teach or suggest such a feature at least for the following reasons.

On page 2 of the Office Action, the Examiner contends that Striker’s sensor assembly 18 corresponds to the claimed sensor wheel, Striker’s GMR elements 22 correspond to the claimed GMR element, and Striker’s concentrators 30 correspond to the claimed magnetizing portion. The Examiner further asserts that Striker teaches that the rotation angle is detected by making two turns of the steering shaft as one cycle of the steering angle signal at col. 3, lines 33-54.

However, the portion of Striker cited by the Examiner merely discloses that resistance values of the GMR elements 22 are measured by applying a uniform magnetic field 36 across sensor assembly 18. The cited portion and the remaining portions of Striker are silent about detecting a rotational angle based on the steering angle of a steering wheel by making two turns of the steering shaft as one cycle of the steering angle signal, as recited by claim 1. Indeed,

Striker is silent about a steering shaft or a steering wheel. The Examiner acknowledges this deficiency, and alleges that it would have been obvious to combine the sensor of Striker with a steering shaft and steering wheel to sense the steering angle given its minimal need for calibration, small size, cost effectiveness, and reliability.

Even if one of ordinary skill in the art were to combine Striker's sensor with a steering wheel and steering shaft, as asserted by the Examiner, Striker does not teach or suggest that a rotational angle would be detected based on the steering angle of the steering wheel by making two turns of the steering shaft as one cycle of the steering angle signal from the alleged sensor wheel 18, as recited by claim 1. Striker does not teach, suggest, or even contemplate such a relationship between sensor assembly 18 and any steering shaft. Likewise, Striker does not teach, suggest, or even contemplate making two turns of the steering shaft as one cycle of the steering angle signal by adjusting a moderation ratio between the sensor wheel and the steering shaft, as recited by claim 1.

Because Striker does not teach or suggest all of the features of claim 1, Applicants submit that the claim would not have been rendered unpatentable by Striker. Applicants further submit that claims 3 and 4, being dependent on claim 1, are patentable at least by virtue of their dependency.

Further, Applicants submit that Schmollngruber does not cure the above noted deficiencies of Striker with regard to claim 1. Accordingly, Applicants submit that claim 2 is patentable at least by virtue of its dependency on claim 1.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the

Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.


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